

# NVR-916NS

16 Channel 1U 16PoE AI Network Video Recorder



- Built in 16 port PoE, ports 1-8 support ePoE & EoC
- Human Body Temperature Thermal Support
- H.265 support, 4K display Output
- Supports Facial Recognition, includes built in Database
- IVS, Perimeter Protection, Smart Search
- 320Mbps total Bandwidth (160Mbps when AI function is enabled)
- 2 SATA III Ports, Up to 10TB capacity for each HDD

## System Overview

The NVR-916NS is the newest in IC Realtime's 4K AI NVR series. The NVR features H.265 encoding, 4K output, as well as a built-in 16 port PoE, which offers a quick and simple installation solution.

The real magic behind this NVR is the built-in deep learning module, which adopts video image structuring technology based on deep learning algorithms, achieving high-precision human face recognition and perimeter protection. The Intelligent Motion Detect (iMD) and Perimeter Protection is able to recognize objects as a vehicle or a person. The NVR includes a Facial Recognition Database with database management and also supports Human Body Temperature Thermal cameras. By applying deep learning artificial intelligence and flexibility of applications, the NVR-916NS represents the newest step in IC Realtime's AI application to Network Video Recorders.

## Functions

### 4K Resolution

4K resolution is a revolutionary breakthrough in image processing technology. 4K delivers four times the resolution of standard HDTV 1080p cameras and offers superior picture quality and image details. 4K resolution improves the clarity of a magnified scene to view or record crisp forensic video from large areas

### AI Search

Supports searching the metadata of human and vehicles. Supports uploading face pictures to NVR and compare them with recorded faces in NVR by similarity. Enables operators to quickly and easily search through multiple channels through a long time duration, helping to efficiently discover when and where a person of interest appears.

### Real Time Face Recognition

Video stream & picture stream real time face recognition. Facial attributes analysis features including gender, age, expression, glasses, moustache, mouth mask. Identify people and also capture, record faces with metadata. Facial feature filtering while real time display, only show faces with target features

### Perimeter Protection

IC Realtime's Perimeter Protection features significantly improve detection accuracy. The benefits of Perimeter Protection include up to a 90% reduction in false alarms. Other advantages include a decrease in pixel count requirement for object detection, which translates into more efficiency with less strain on the system. Perimeter Protection options let you customize tripwires based on the object type and allow intelligent automation within a limited area of access such as pedestrian or vehicle-only zones. The combination of advanced AI analytics and real-time alerts maximizes efficiency & balance of the total systems capacity and resources resulting in greater surveillance system efficiency.

## Technical Specification

### System

|                  |                               |
|------------------|-------------------------------|
| Main Processor   | Multi-core embedded processor |
| Operating System | Embedded LINUX                |

### Audio and Video

|                 |                                        |
|-----------------|----------------------------------------|
| IP Camera Input | 16 Channel                             |
| Two-way Talk    | 1 Channel Input, 1 Channel Output, RCA |

### Display

|                     |                                                                                                      |
|---------------------|------------------------------------------------------------------------------------------------------|
| Interface           | 1 HDMI, 1 VGA                                                                                        |
| Resolution          | HDMI: 3840 × 2160, 1920 × 1080, 1280 × 1024, 1280 × 720<br>VGA: 1920 × 1080, 1280 × 1024, 1280 × 720 |
| Decoding Capability | 4-ch@8MP(30fps), 16-ch@1080P(30fps)                                                                  |
| Window Split View   | 1/4/8/9/16                                                                                           |

### Recording

|                 |                                                                                  |
|-----------------|----------------------------------------------------------------------------------|
| Total Bandwidth | 320 Mbps (160Mbps when AI function is enabled)                                   |
| Compression     | Smart H.265+/H.265/Smart H.264+/H.264/MJPEG                                      |
| Resolution      | 16MP, 12MP, 8MP, 6MP, 5MP, 4MP, 3MP, 1080P, 1.3MP, 720P, D1 etc                  |
| Record Mode     | Manual, Schedule (Continuous, MD(Motion Detection) , Alarm, IVS)                 |
| Record Interval | 1 ~ 120 min (default: 60 min), Pre-record: 1 ~ 30 sec, Post-record: 10 ~ 300 sec |

### Video Detection & Alarm

|                 |                                                                                                    |
|-----------------|----------------------------------------------------------------------------------------------------|
| Trigger Events  | Alarm Out, Video Push, Email, Recording, PTZ, Tour, Snapshot, Voice Prompt, Buzzer and Screen Tips |
| Video Detection | Motion Detection, MD Zones: 396 (22 × 18), Video Loss, Tampering and Scene Change                  |
| Alarm input     | 4 Channel                                                                                          |
| Relay Output    | 2 Channel                                                                                          |

### Playback and Backup

|               |                                                             |
|---------------|-------------------------------------------------------------|
| Sync Playback | 1/4/9/16                                                    |
| Search Mode   | Time /Date, Alarm, MD and Exact Search (accurate to second) |
| Backup Mode   | USB Device/Network                                          |

### Network

|                   |                                                                                                                                         |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Interface         | 1 RJ-45 Ports (10/100/1000Mbps)                                                                                                         |
| PoE               | 16 ports (IEEE802.3af/at)<br>Ports 1-8 support ePoE & EoC                                                                               |
| Network Protocols | HTTP, HTTPS, TCP/IP, IPv4/IPv6, UPnP, SNMP, RTSP, UDP, SMTP, NTP, DHCP, DNS, IP Filter, PPPoE, DDNS, FTP, Alarm Server, IP Search , P2P |
| Max. User Access  | 128 users                                                                                                                               |
| Smart Phone       | iPhone, iPad, Android                                                                                                                   |
| Interoperability  | ONVIF 2.4, SDK, CGI                                                                                                                     |

### Interface

|       |                                                 |
|-------|-------------------------------------------------|
| USB   | 2 USB Ports (1 Rear USB 3.0 , 1 Front USB 2.0 ) |
| RS232 | 1 Port, for PC Communication and Keyboard       |
| RS485 | 1 Port, for PTZ Control                         |

### Storage

|              |                                                    |
|--------------|----------------------------------------------------|
| Internal HDD | 2 SATA III Ports, Up to 10TB capacity for each HDD |
|--------------|----------------------------------------------------|

### General

|                      |                                                                                                                   |
|----------------------|-------------------------------------------------------------------------------------------------------------------|
| Power Supply         | Single, AC100V ~ 240V, 50 ~ 60 Hz                                                                                 |
| Power Consumption    | NVR: <16.5W (Without HDD)<br>PoE: Max 25.5W for single port<br>130W total rated power, 80% control for protection |
| Smart Fan            | Supported, temperature controlled variable speed                                                                  |
| Operating Conditions | -10°C ~ +55°C (+14°F ~ +131°F), 86 ~ 106kpa                                                                       |
| Storage Conditions   | 0°C to +40°C (+32°F to +104°F), 30~85% RH                                                                         |
| Dimensions           | 1U, 375.0 mm × 327.4 mm × 53.0 mm<br>(14.76" × 12.89" × 2.09")                                                    |
| Net Weight           | 6.0 lb (2.70kg) (without HDD)                                                                                     |
| Gross Weight         | 8.8 lb (4.00kg) (without HDD)                                                                                     |

### Third-party Support

|                     |                                                                                                                                  |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Third-party Support | Arecont Vision, Airlive, AXIS, Canon, Dynacolor, Dahua, JVC, LG, Panasonic, Pelco, PSIA, Samsung, Sanyo, Sony, Watchnet and more |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------|

### Certifications

|     |                                        |
|-----|----------------------------------------|
| CE  | EN55032, EN55024, EN50130-4, EN60950-1 |
| FCC | Part 15 Subpart B, ANSI C63.4-2014     |
| UL  | UL 60950-1                             |

## AI Features

### Intelligent Video System (IVS)

|              |                                       |
|--------------|---------------------------------------|
| Capabilities | Heat Map, People Counting (by camera) |
|--------------|---------------------------------------|

### Perimeter Protection

|              |                                                                                                                           |
|--------------|---------------------------------------------------------------------------------------------------------------------------|
| Capabilities | Up to 16 channels, Max 10 rules per channel (Resources are shared with Face Recognition, see AI Resource breakdown below) |
| Performance  | Human/Vehicle secondary recognition for tripwire and intrusion                                                            |
| AI Search    | Search by target classification (Human, Vehicle)                                                                          |

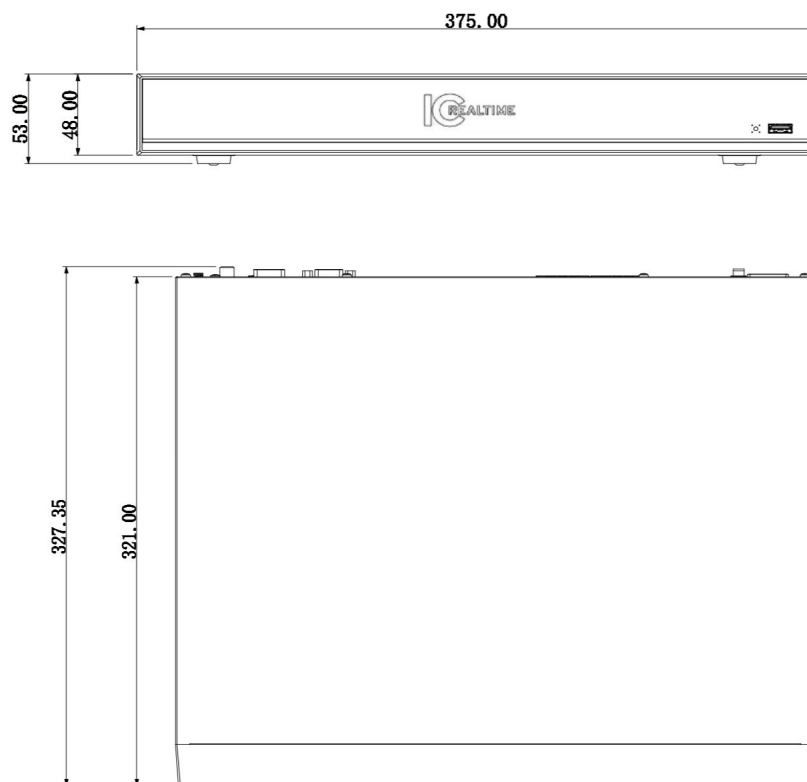
### Face Recognition

|                                 |                                                                                                                                                         |                                                                                                                      |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Capabilities                    | 4 channel video stream face recognition/ 16 channel picture stream face recognition. See AI Resource breakdown below.                                   |                                                                                                                      |
| Recorder AI Resources Breakdown | Face Recognition channels used                                                                                                                          | AI IVS Capabilities. *Non- AI IP cameras are able to utilize AI features, as the AI is handled by the NVR resources. |
|                                 | 0                                                                                                                                                       | AI IVS on all 16 channels                                                                                            |
|                                 | 1                                                                                                                                                       | 13 channels of IVS for a total of 14 channels with AI features.                                                      |
|                                 | 2                                                                                                                                                       | 10 channels of IVS for a total of 12 channels with AI features.                                                      |
|                                 | 3                                                                                                                                                       | 8 channels of IVS for a total of 11 channels with AI features.                                                       |
|                                 | 4                                                                                                                                                       | 5 channels of IVS for a total of 9 channels with AI features.                                                        |
| Performance                     | Max 22 face pictures/sec processing (modeling and comparing)                                                                                            |                                                                                                                      |
| Stranger Mode                   | Detect strangers' faces (not in device's face database). Similarity threshold can be set manually.                                                      |                                                                                                                      |
| Database Management             | Up to 20 face databases with 100,000 face images in total. Name, gender, birthday, nationality, address, ID information can be added to each face image |                                                                                                                      |
| Database Application            | Each database can be applied to video channels independently                                                                                            |                                                                                                                      |
| Triggerable Events              | Buzzer, Voice Prompts, Email, Snapshot, Recording, Alarm Out, PTZ Activation, etc.                                                                      |                                                                                                                      |
| AI Search                       | Up to 8 target face images at the same time, similarity threshold can be set for each target face image                                                 |                                                                                                                      |

### Metadata

|                    |                                                                                                           |
|--------------------|-----------------------------------------------------------------------------------------------------------|
| Face:              | Gender, age, glasses, beard, mouth mask, expression.                                                      |
| Vehicle:           | Plate Number, type, color, vehicle type, logo, plate color, ornament, mobile phone use, seatbelt, region. |
| Human Body:        | Clothing: Top, top color, bottom, bottom color, hat, bag, gender, age, umbrella.                          |
| Non-motor Vehicle: | Type, color, number of passengers, helmet.                                                                |
| AI Search          | Supports search target video by metadata.                                                                 |

## Dimensions (mm/in)



## Panels

